Ian Gallagher

Curriculum Vitae

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Education

Sep 2024–Present **PhD Student, Applied Mathematics**, *University of California*, Davis, *4.0 GPA*
Taken or attending graduate courses in Dynamical Systems, Numerical Solutions of PDEs, Physics of Information, Numerical Optimization, and Applied Harmonic Analysis.

Sep 2017–Jun 2021 **Bachelor of Science, Mathematics**, *Cal Poly*, San Luis Obispo, *3.9 GPA*
Graduated Summa Cum Laude with a Computer Science Minor.
President's List (2018, 2019, 2020). Dean's List (9 Quarters).

Honors

Jun 2021 **Robert P. Balles Most Outstanding Senior**, *Mathematics Department*, Cal Poly
One of two students selected on the basis of participation in clubs or societies, contribution to the image of the department, and scholastic achievement.

Jun 2020 **Accenture Outstanding Junior of the Year**, *Mathematics Department*, Cal Poly
Awarded to a single junior in the mathematics major for demonstrating superior leadership skills and the ability to work effectively with peers and faculty.

Jun 2019, Jun 2020 **Edward Van Duyne Memorial Scholarship**, *Mathematics Department*, Cal Poly
Two time recipient of scholarship intended for high-achieving students in the mathematics major.

Experience

Sep 2024–Present **Software Engineer**, *Pariveda Solutions*, San Francisco
Tasked with improvements to backend service infrastructure and increasing observability and alerting of systems. Made optimizations to reduce request latency by 20% and request volume by more than 50% for core customer support data.

Jul 2021–May 2023 **Software Engineer**, *Pariveda Solutions*, San Francisco
Tasked with improvements to backend service infrastructure and increasing observability and alerting of systems. Made optimizations to reduce request latency by 20% and request volume by more than 50% for core customer support data.

Sep 2019–Jun 2021 **Software Team Member**, *CubeSat Laboratory*, Cal Poly
Software lead for NASA ER-2 custom cubesat payload carrier, as well as a payload designed to record the in-flight vibrational profile of launches. Made extensive changes to the flight computer's event loop architecture, and troubleshooted interface problems with external electrical components. Updated an existing microcontroller's analog to digital converter sampling pipeline to interface with the carrier.

Jan 2021–Jun 2021 **Senior Project**, *Mathematics Department*, Cal Poly
Worked with Dr. Eric Brussel answering followup questions from our prior summer research project. Theorized and then proved results about the maximal commutative subalgebras of two by two matrices over a finite field. Fully determined the conjugacy classes of the subalgebras and gave formulas for the count of each type of subalgebra for a given finite field.

Jun 2020–Sep 2020 **Frost Research Scholar**, *Mathematics Department*, Cal Poly
Member of pure mathematics student research team lead by Dr. Eric Brussel. Studied results about the structure of the moduli space of embedded complex planes within the quaternions. We extended these results to categorize the embedded commutative sub-algebras of generalized quaternions over the real numbers, determining their conjugacy classes and a representation of the moduli spaces.

Apr 2020–Dec 2020 **Campus Tutor**, *Learning Support Center*, Cal Poly

Provided one on one tutoring for students enrolled in lower division math and computer science courses. Put an emphasis on guiding questions and problem solving approaches to lead students towards solutions. Would work with students to review any gaps they had with the course material.

Sep 2019–Mar 2020 **Course Grader**, *Cal Poly Mathematics Department*

Grader for two sections of MATH 143 (Calculus III). Course content included: infinite sequences and series, power series and taylor series, vector algebra, parametric curves. Evaluated students work for completion and correctness, including marks for incorrect steps in a solution.

Jun 2019–Sep 2019 **Frost Research Scholar**, *Cal Poly Mathematics Department*

Worked with Dr. Charles D. Camp to implement and analyze theoretical climate models from research papers in Matlab. We compiled many runs of the models over a large parameter space and with varied forcing signals to study how changing the strength and timescales of these signals affected the periodicity and synchronization of the various models. Created visuals and statistical tests to investigate link between internal model behavior and external forcing signals.